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A1
pathway to said at least two temperatures while a sample is continuously flowing along said at least a portion of said sample pathway.

Sub C3
A2
12 The device of Claim 1, wherein said at least one temperature regulated zone comprises a metal bar in fluid communication with a plurality of water sources containing water at said at least two temperatures, said metal bar being in thermal communication with said at least a portion of said sample pathway.

Please add the following claims 52-57:

52. The device of Claim 1, wherein said device comprises a microfluidic substrate comprising at least one temperature regulated zone which is capable of cycling between at least two temperatures, and at least one constant temperature zone.

A3
53. The device of Claim 1, wherein said device comprises a microfluidic substrate comprising several temperature regulated zones capable of cycling between at least two temperatures.

54. The device of Claim 1, wherein said flowing sample goes through a plurality of temperature cycles as it travels through the temperature regulated zone.

55. The device of Claim 8, wherein said channels are fed in series with different samples separated from each other by separators.

56. The device of Claim 8 wherein the portion of the channel which crosses the temperature regulated zone is rectilinear.

57. The device of Claim 1, wherein said device comprises one temperature regulated zone.